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EXAMINER

TRAN, TUNG Q

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/773,226	Applicant(s) SEGEL, JONATHAN DEAN	
	Examiner Tung Q. Tran	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19-30, 33, 34, 36-41 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19-30, 33, 34, 36-41 and 43-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendments

1. Amendment filed October 31 2007 has been acknowledged. Claims 18, 31, 32, 35, and 42 are cancelled. Claims 1, 13, 14, 17, 30, 33, 34, 37, and 43 are amended.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17, 19, 33-34, 36-39, 41, and 44-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 17, limitation "wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link by discarding low priority data from said user traffic" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 33, limitation "user-programmable link preferences" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 34, limitation "user-programmable link preferences include a usage quota on the wireline link" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 36, limitation "maintaining said wireline link always available for traffic" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 37, limitation "maintaining said wireless link available only on request" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 39, limitation "maintaining said wireless line link unavailable when traffic is switched over said wireline link" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 41, limitation "wherein said test data comprises one of low-priority user traffic and test probes" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 44, limitation "said high priority traffic is selected by means of policing or shaping low priority traffic at said user site when traffic presented exceeds the available upstream link capacity" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Regarding claim 45, limitation "said high priority traffic is selected by means of policing or shaping low priority traffic at said network provider site when traffic presented exceeds the available upstream link capacity" is not supported by the specification. Applicant does not disclose this limitation in the specification so that one skilled in the art can make and use the invention.

Any claim not specifically addressed, above, is being rejected as incorporating the deficiencies of a claim upon which it depends.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17, 19, 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "said step of filtering" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Any claim not specifically addressed, above, is being rejected as incorporating the deficiencies of a claim upon which it depends.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626; hereinafter Li) in view of Dop et al. (US Patent No. 5,185,779; hereinafter Dop) and further in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562; hereinafter Hrastar).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 1, a protection system for establishing high availability communications (see the Title), comprising: a wireline link processor (Fig. 11, High-speed Modem 30) for connecting a user site to a network provider site over a broadband access connection (Fig. 11, High-speed Modem 30 connecting to Internet 25); a dial-up modem for connecting said user site and said provider network site over a backup connection (Fig. 11, Dial-up modem 50 connecting to Internet 25); means for monitoring operation of said wireline link (see "The modem interchange software detects" recited in para. [0033] on page 3) and generating a fault signal upon detection of a specified under-performance condition of the broadband access connection (see "communicates the failure to the modem backup software module" recited in para. [0033] on page 3); means for switching user traffic received over a user interface from

said wireline link to said backup connection according to said fault signal (see “switch from the high-speed modem to a dial-up modem” recited in para. [0033], page 3; and how “the data redirection software module” redirects all data recited in [0034], page 30); means for switching back said user traffic from said backup connection to said broadband access connection (para. [0035], [0090] Fig. 14, see steps 380 through 405 for restoring the high-speed connection) once said fault signal has been cleared (para. [0035], [0090], see detecting if the high-speed modem resumes to normal operation); means for switching back said user traffic from said backup connection on said broadband access connection (para. [0035], [0090] Fig. 14, see steps 380 through 405 for restoring the high-speed connection) and determining whether said fault signal has been cleared (para. [0035], [0090], see detecting if the high-speed modem resumes to normal operation).

Regarding claim 2, wherein said fault signal indicates one of a failure, performance degradation and overload of the wireline link (see “detects the high-speed modem failure” recited in para. [0033] on page 3).

Regarding claim 9, wherein said means for switching is a data packet switch (Fig. 11, Router 175) for communicatively coupling said user interface to one of dial-up link processor and said wireline link processor under control of said means for monitoring (Fig. 11, Dial-up Modem 50 and High-speed Modem 30).

Regarding claim 10, wherein said means for switching is one of a router and an OSI layer 3 switch (Fig. 11, Router 175).

Regarding claim 11, wherein said means for switching is an OSI layer 2 Ethernet switch (Fig. 11, Router 175; and see "LAN" recited in para. [0089], page 7).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 1, a wireless link processor for connecting said user site and said provider network site over a backup connection; and means for switching back said user traffic from said backup link on said wireline link at specific intervals; regarding claim 9, wherein coupling said user interface to one of said wireless link processor and said wireline link processor under control of said means for monitoring; regarding claim 12, wherein said means for switching is a physical layer media switch.

Dop discloses the cellular alarm backup system (see the Title) comprising the following features:

Regarding claim 1, a wireless protection system comprising a wireless link processor (see cellular backup system recited in the Abstract) for connecting said user site and said provider network site over a backup connection (see cellular system transmitting call to a central alarm station recited in the Abstract); and means for switching user traffic received over said user interface between said wireline (see telephone land line recited in the Abstract) and said wireless link (see cellular system recited in the Abstract) according to said fault signal (see switching the telephone line over the cellular system upon a inoperativeness of the telephone line recited in the Abstract).

Regarding claim 9, wherein coupling said user interface to one of said wireless link processor and said wireline link processor under control of said means for

monitoring (see switching the telephone line over the cellular system upon a inoperativeness of the telephone line recited in the Abstract).

Regarding claim 12, wherein said means for switching is a physical layer media switch (see Fig. 1, Box 12; and see "Box 12" recited in col. 4, line 54 continues to col. 5, line 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Dop, in order to implement the system easier and keep it work in almost any topology.

Li and Dop disclose the claimed limitations above. They do not disclose the following features: regarding claim 1, means for switching back said user traffic from said backup link on said wireline link at specific intervals.

Hrastar discloses a method of using routing protocols to reroute packets during a link failure (see the Title) comprising the following features:

Regarding claim 1, means for switching back said user traffic from said backup link on said wireline link at specific intervals (see "predetermined period of time" recited in para. [0024], page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Dop by using the features, as taught by Hrastar, in order to restore the system faster and more reliable.

8. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Dop et al. (US Patent No. 5,185,779) and further in view of Hrastar et al. (US Patent Application Publication

No. 2001/0043562) and Antoniou et al. (US Patent No. 6,965,775; hereinafter Antoniou).

Li, Dop, and Hrastar disclose the claimed limitations above. They do not disclose the following features: regarding claim 3, further comprising at said user site means for filtering said user traffic on receipt of the fault signal for selecting high-priority traffic to be carried over said backup connection; regarding claim 4, further comprising link filtering means at the network provider site for selecting high-priority traffic to be carried to said user site over said backup connection on receipt of said fault signal; regarding claim 5, further comprising: means for filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the high priority traffic to be transmitted over said backup connection; and network link filtering means for filtering said user traffic at the network provider site for selecting high-priority traffic to be carried to said user site over said backup connection on receipt of said fault signal.

Antoniou discloses service-oriented protection scheme for a radio access network (see the Title) comprising the following features.

Regarding claim 3, further comprising at said user site means for filtering said user traffic on receipt of the fault signal for selecting high-priority traffic to be carried over said backup connection (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

Regarding claim 4, further comprising link filtering means at the network provider site for selecting high-priority traffic to be carried to said user site over said backup

connection on receipt of said fault signal (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

Regarding claim 5, further comprising: means for filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the high priority traffic to be transmitted over said backup connection (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7); and network link filtering means for filtering said user traffic at the network provider site for selecting high-priority traffic to be carried to said user site over said backup connection on receipt of said fault signal (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Dop, and Hrastar by using the features, as taught by Antoniou, in order to satisfy quality of service.

9. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Dop et al. (US Patent No. 5,185,779) and further in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562) and Simmons (US Patent No. 6,597,658; hereinafter Simmons).

Li, Dop, and Hrastar disclose the claimed limitations above.

In addition, Li also discloses the following features:

Regarding claim 8, a network provider reconfiguring mechanism for separating (see "router" recited in para. [0034], page 3) traffic from said user traffic routing traffic to

said user site over said backup connection (see "routes the data to the appropriate Internet appliance" by the router recited in para. [0034], page 3).

Li, Dop, and Hrastar do not disclose the following features: regarding claim 6, wherein said fault signal indicates an overload of said wireline link; regarding claim 8, further comprising: network link filtering means for filtering said user traffic at said network provider site on receipt of said fault signal for selecting said overload traffic.

Simmons discloses a method and system of dynamic traffic control in a communication network (see the Title) comprising the following features.

Regarding claim 6, wherein said fault signal indicates an overload of said wireline link (see "overload condition" recited in col. 3, lines 47-50).

Regarding claim 8, further comprising: network link filtering means for filtering said user traffic at said network provider site on receipt of said fault signal for selecting said overload traffic (see routing overload traffic into protection links recited in col. 3, lines 29-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Dop, and Hrastar by using the features, as taught by Simmons, in order to prevent or reduce congestion.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Dop et al. (US Patent No. 5,185,779) and further in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562), Simmons (US Patent No. 6,498,844), and Gerszberg et al. (US Patent No. 6,714,534; hereinafter Gerszberg).

Li, Dop, Hrastar, and Simmons disclose the claimed limitations above.

In addition, Simmons also discloses the following features:

Regarding claim 7, means for filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic the overload traffic to be carried over said backup connection (see routing overload traffic into protection links recited in col. 3, lines 29-44).

Li, Dop, Hrastar, and Simmons do not disclose the following features: regarding claim 7, a network provider reconfiguring mechanism for merging said overload traffic back into said user traffic.

Gerszberg discloses a system architecture for bypassing a local exchange carrier (see the Abstract) comprising the following features.

Regarding claim 7, a network provider reconfiguring mechanism for merging traffic back into said user traffic (see "aggregate" recited in col. 14, lines 27-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Dop, Hrastar, and Simmons by using the features, as taught by Gerzberg, in order to restore the traffic and reassembly packets or frames.

11. Claims 13, 15, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626; hereinafter Li) in view of Weldon et al. (US 5,936,938).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 13, a method for protecting a wireline access link (see the Title), comprising the steps of: a) transmitting user traffic between a user site and a network provider site in a broadband access connection carried over said wireline link (see Internet access on high-speed modem recited in the Abstract); b) monitoring integrity of said wireline link (see "The modem interchange software detects" recited in para. [0033] on page 3) and generating a fault signal upon detection of a specified under-performance of said broadband access connection (see "communicates the failure to the modem backup software module" recited in para. [0033] on page 3); and c) switching said user traffic from said broadband access connection to a backup connection according to said fault signal (see "switch from the high-speed modem to a dial-up modem" recited in para. [0033], page 3; and how "the data redirection software module" redirects all data recited in [0034], page 30); wherein said fault signal is generated in response to a degraded performance detected on said wireline link (see "communicates the failure to the modem backup software module" recited in para. [0033] on page 3).

Regarding claim 15, wherein said fault signal indicates a failure of the wireline link (see "detects the high-speed modem failure" recited in para. [0033] on page 3).

Regarding claim 36, further comprising maintaining said wireline link always available for traffic (see once high-speed modem resumes, high-speed connection is reestablished recited in Fig. 10).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 13, degraded condition includes an increased bit error rate, packet loss, excessive latency, or jitter;

Weldon discloses a system and method for providing switching between paths in a telecommunications system comprising the following features.

Regarding claim 13, degraded condition includes an increased bit error rate, packet loss, excessive latency, or jitter (see "loss of frame" and "excessive bit error rates" recited in col. 4, lines 43-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Weldon, in order to provide a faster and more efficient way for switching between paths in a telecommunication system. Further, it has the distinct advantage of being self contained in that the optical interface is capable of implementing automatic switching without communicating with or being directed by an external unit that is outside of the data path. Accordingly, switching can occur in a faster and more reliable manner, causing less disruption to service (Weldon: col. 5, lines 51-59).

12. Claims 14 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626; hereinafter Li) in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 14, a method for protecting a wireline access link (see the Title), comprising the steps of: a) transmitting user traffic between a user site and a network provider site in a broadband access connection carried over said wireline link (see Internet access on high-speed modem recited in the Abstract); b) monitoring integrity of said wireline link (see "The modem interchange software detects" recited in para. [0033] on page 3) and generating a fault signal upon detection of a specified under-performance of said broadband access connection (see "communicates the failure to the modem backup software module" recited in para. [0033] on page 3); c) switching said user traffic from said broadband access connection to a backup connection according to said fault signal (see "switch from the high-speed modem to a dial-up modem" recited in para. [0033], page 3; and how "the data redirection software module" redirects all data recited in [0034], page 30); d) switching back said user traffic from said backup connection to said broadband access connection (para. [0035], [0090] Fig. 14, see steps 380 through 405 for restoring the high-speed connection) once said fault signal has been cleared (para. [0035], [0090], see detecting if the high-speed modem resumes to normal operation); switching back said user traffic from said backup connection on said broadband access connection (para. [0035], [0090] Fig. 14, see steps 380 through 405 for restoring the high-speed connection) and determining whether said fault signal has been cleared (para. [0035], [0090], see detecting if the high-speed modem resumes to normal operation).

Regarding claim 40, wherein said step d) comprises transmitting test data over said wireline link (see "detects that change and communicates that status" recited in

para. [0090], page 7) to determine recovery of said broadband access connection (see "high-speed modem resumes" recited in para. [0090], page 7).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 14, switching back said user traffic from said backup link on said wireline link at specific intervals.

Hratar discloses a method of using routing protocols to reroute packets during a link failure (see the Title) comprising the following features:

Regarding claim 14, switching back said user traffic from said backup link on said wireline link at specific intervals (see "predetermined period of time" recited in para. [0024], page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Hratar, in order to restore the system faster and more reliable.

13. Claims 16, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Antoniou et al. (US Patent No. 6,965,775).

Li and Weldon disclose the claimed limitations above. They do not disclose the following features: regarding claim 16, comprising filtering said user traffic on receipt of said fault signal for selecting high-priority traffic to be carried over said backup connection; regarding claim 20, further comprising filtering said user traffic at the network provider on receipt of said fault signal for selecting high-priority traffic to be

carried to said user site over said backup connection; regarding claim 22, further comprising: filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the high-priority traffic to be transmitted over said backup connection; and filtering said user traffic at said network provider site on receipt of said fault signal for selecting high-priority traffic to be carried to said user site over said backup connection.

Antoniou discloses service-oriented protection scheme for a radio access network (see the Title) comprising the following features.

Regarding claim 16, comprising filtering said user traffic on receipt of said fault signal for selecting high-priority traffic to be carried over said backup connection (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

Regarding claim 20, further comprising filtering said user traffic at the network provider on receipt of said fault signal for selecting high-priority traffic to be carried to said user site over said backup connection (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

Regarding claim 22, further comprising: filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the high-priority traffic to be transmitted over said backup connection (see protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7); and filtering said user traffic at said network provider site on receipt of said fault signal for selecting high-priority traffic to be carried to said user site over said backup connection (see

protection path is configured with quality of service recited in col. 2, lines 38-47; and see Table 1 on page 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Antoniou, in order to satisfy quality of service.

14. Claims 17 and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Gupta et al. (US Patent Application Publication No. 2002/0075868; hereinafter Gupta).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 17, a method for protecting a wireline access link (see the Title), comprising the steps of: a) transmitting user traffic between a user site and a network provider site in a broadband access connection carried over said wireline link (see Internet access on high-speed modem recited in the Abstract); b) monitoring integrity of said wireline link (see "The modem interchange software detects" recited in para. [0033] on page 3) and generating a fault signal upon detection of a specified under-performance of said broadband access connection (see "communicates the failure to the modem backup software module" recited in para. [0033] on page 3); and c) switching said user traffic from said broadband access connection to a backup connection according to said fault signal (see "switch from the high-speed modem to a dial-up modem" recited in para. [0033], page 3; and how "the data redirection software module" redirects all data recited in [0034], page 30); wherein said step of filtering

comprises adapting the bandwidth of said wireline link to the bandwidth of said backup link (see “switch from the high-speed modem to a dial-up modem” recited in para.

[0033], page 3; and how “the data redirection software module” redirects all data recited in [0034], page 30).

Regarding claim 38, further comprising maintaining said wireline link unavailable when traffic is switched over the dial-up link (see once switching to dial-up link, all the traffic is redirected through dial-up modem while the high-speed link is unavailable recited in para. [0089], page 7).

Regarding claim 39, further comprising maintaining dial-up link unavailable when traffic is switched over said wireline link (see once the high-speed modem resumes, the dial-up connection is shut down while the high-speed connection is reestablished recited in para. [0090] and Fig. 14).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 17, wherein said backup connection is a wireless link and wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link by discarding low priority data from said user traffic; regarding claim 37, further comprising maintaining said wireless link available only on request; regarding claim 38; further comprising maintaining said wireline link unavailable when traffic is switched over said wireless link; regarding claim 39, further comprising maintaining said wireless line link unavailable when traffic is switched over said wireline link.

Gupta discloses a network node with multi-medium interfaces (see the Title) comprising the following features.

Regarding claim 17, wherein said backup connection is a wireless link (see "wireless link as a backup link" recited in para. [0043], page 4) and wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link (see multiple interface enables to switch links between fiber optic and wireless links recited in para. [0041], page 3 and [0043], page 4) by discarding low priority data from said user traffic (see dropping low priority data packets recited in para. [0086], pages 9-10).

Regarding claim 38, wherein said backup connection is a wireless link (see "wireless link as a backup link" recited in para. [0043], page 4).

Regarding claim 39, wherein said backup connection is a wireless link (see "wireless link as a backup link" recited in para. [0043], page 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Gupta, in order to implement the system easier, keep it work in almost any topology, and satisfy quality of service.

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Gupta et al. (US Patent Application Publication No. 2002/0075868) and further in view of Simons et al. (US Patent No. 7,023,845; hereinafter Simons).

Li and Gupta disclose the claimed limitations in paragraph above.

In addition, Gupta also discloses the following features:

Regarding claim 19, wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link (see multiple interface is configured to transfer data using fiber optic and wireless links recited in para. [0041], page 3) by discarding low priority data from said user traffic (see dropping low priority data packets recited in para. [0086], pages 9-10).

Li and Gupta do not disclose the following features: regarding claim 19, wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link by buffering low priority data from said user traffic.

Simons discloses a network device including multiple mid-planes (see the Title) comprising the following features.

Regarding claim 19, wherein said step of filtering comprises buffering low priority data from said user traffic (see "buffer lower priority traffic" recited in col. 49, lines 41-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Gupta by using the features, as taught by Simons, in order to prevent or reduce congestion.

16. Claims 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626; hereinafter Li) in view of Weldon et al. (US 5,936,938) and further in view of Gupta et al. (US Patent Application Publication No. 2002/0075868).

Li and Weldon disclose the claimed limitations above. They do not disclose the following features: regarding claim 21, wherein said step of filtering comprises one of discarding and buffering low priority data from said user traffic.

Gupta discloses a network node with multi-medium interfaces (see the Title) comprising the following features.

Regarding claim 21, wherein said step of filtering comprises one of discarding and buffering low priority data from said user traffic see dropping low priority data packets recited in para. [0086], pages 9-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Gupta, in order to implement the system easier, keep it work in almost any topology, and satisfy quality of service.

17. Claims 23, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Simmons (US Patent No. 6,597,658).

Li and Weldon disclose the claimed limitations above. Li and Weldon do not disclose the following features: regarding claim 23, wherein said fault signal indicates an overload condition of said wireline link; regarding claim 25, further comprising filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the overload traffic to be carried over said backup connection; regarding claim 27, further comprising, at said network provider site: filtering said user traffic on

receipt of said fault signal for selecting said overload traffic; and routing said overload traffic to said user site over said backup connection.

Simmons discloses a method and system of dynamic traffic control in a communication network (see the Title) comprising the following features.

Regarding claim 23, wherein said fault signal indicates an overload of said wireline link (see "overload condition" recited in col. 3, lines 47-50).

Regarding claim 25, further comprising filtering said user traffic at said user site on receipt of said fault signal for selecting from said user traffic, the overload traffic to be carried over said backup connection (see routing overload traffic into protection links recited in col. 3, lines 29-44).

Regarding claim 27, further comprising, at said network provider site: filtering said user traffic on receipt of said fault signal for selecting said overload traffic; and routing said overload traffic to said user site over said backup connection (see routing overload traffic into protection links recited in col. 3, lines 29-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Simmons, in order to prevent or reduce congestion.

18. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Antoniou et al. (US Patent No. 6,965,775) and Simmons (US Patent No. 6,597,658).

Li, Weldon, and Antoniou disclose the claimed limitations in above. They do not disclose the following features: regarding claim 24, wherein an overload condition is recognized based on a measured throughput near wireline link capacity.

Simmons discloses a method and system of dynamic traffic control in a communication network (see the Title) comprising the following features.

Regarding claim 24, wherein an overload condition (see "overload condition" recited in col. 3, lines 49-50) is recognized based on a measured throughput near wireline link capacity (see "excess capacity" recited in col. 3, lines 34-44).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Weldon, and Antoniou by using the features, as taught by Simmons, in order to prevent or reduce congestion.

19. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Simmons (US Patent No. 6,597,658) and Gerszberg et al. (US Patent No. 6,714,534).

Li, Weldon, and Simmons disclose the claimed limitations 16 above. They do not disclose the following features: regarding claim 26, merging said overload traffic back into said user traffic at said network provider site.

Gerszberg discloses a system architecture for bypassing a local exchange carrier (see the Abstract) comprising the following features.

Regarding claim 26, merging said overload traffic back into said user traffic at said network provider site (see "aggregate" recited in col. 14, lines 27-29).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Weldon, and Simmons by using the features, as taught by Gerzberg, in order to restore the traffic and reassembly packets or frames.

20. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Sternagle (US Patent Application Publication No. 2002/0184376; hereinafter Sternagle).

Li and Weldon disclose the claimed limitations above. They do not disclose the following features: regarding claim 28, wherein said fault signal is generated based on signaling of link configuration or availability using the 802.3ad Ethernet link aggregation protocol.

Sternagle discloses scalable, reliable session initiation protocol signaling routing node (see the Abstract) comprising the following features.

Regarding claim 28, wherein said fault signal is generated based on signaling of link configuration or availability using the 802.3ad Ethernet link aggregation protocol (see IEEE 802.3ad implemented to make automatic failover recited in para. [0056], page 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Sternagle, in order to make automatic failover possible (Sternagle: para. [0056], page 5).

21. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Cioffi (US Patent Application Publication No. 2005/0152385; hereinafter Cioffi).

Li and Weldon disclose the claimed limitations above. They do not disclose the following features: regarding claim 29, wherein said step c) is based on signaling of link configuration or availability within the IETF RFC 1717/RFC 1990 Multi-link Point to Point protocol.

Cioffi discloses a high speed multiple loop DSL system (see the Title) comprising the following features.

Regarding claim 29, wherein said step c) is based on signaling of link configuration or availability within the RFC 1990 Multi-link Point to Point protocol (see "Multilink PPP" recited in para. [0040], page 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Cioffi, in order to provide increased bandwidth and redundancy in the event of line failures (Cioffi: para. [0040], page 3).

22. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Johnson et al. (US Patent No. 6,147,966).

Li and Weldon disclose the claimed limitations above. They do not disclose the following features: regarding claim 30, wherein said fault signal is generated based on

detection of absence of a signal within a time-out interval, or a failure to respond to an active health test condition.

Johnson discloses route routing in communications networks comprising the following features:

Regarding claim 30, wherein said fault signal is generated based on detection of absence of a signal within a time-out interval, or a failure to respond to an active health test condition (see "the absence of any received forward route-finder signatures" recited in col. 4 lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Weldon by using the features, as taught by Johnson, in order to detect a fault in the system.

23. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Gupta et al. (US Patent Application Publication No. 2002/0075868) and further in view of Smyth et al. (US Patent No. 6,598,229).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 33, a method for protecting a wireline access link (see the Title), comprising the steps of: a) transmitting user traffic between a user site and a network provider site in a broadband access connection carried over said wireline link (see Internet access on high-speed modem recited in the Abstract); b) monitoring integrity of said wireline link (see "The modem interchange software detects" recited in para. [0033])

on page 3) and generating a fault signal upon detection of a specified under-performance of said broadband access connection (see “communicates the failure to the modem backup software module” recited in para. [0033] on page 3); and c) switching said user traffic from said broadband access connection to a backup connection according to said fault signal (see “switch from the high-speed modem to a dial-up modem” recited in para. [0033], page 3; and how “the data redirection software module” redirects all data recited in [0034], page 30).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 33, wherein said backup connection is a wireless link and wherein said fault signal is generated based on user-programmable link preferences.

Gupta discloses a network node with multi-medium interfaces (see the Title) comprising the following features.

Regarding claim 33, wherein said backup connection is a wireless link (see “wireless link as a backup link” recited in para. [0043], page 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Gupta, in order to implement the system easier, keep it work in almost any topology, and satisfy quality of service.

Li and Gupta disclose the claimed limitations above. Li and Gupta do not disclose the following features: regarding claim 33, wherein said fault signal is generated based on user-programmable link preferences; regarding claim 34, wherein said user-programmable link preferences.

Smyth discloses a system and method for detecting and correcting a defective transmission channel (see the Title) comprising the following features:

Regarding claim 33, wherein said fault signal is generated based on user-programmable link preferences (Fig. 4; and see how references are set up to detect a defective channel recited in col. 9 line 37-col. 10 line 26).

Regarding claim 34, wherein said user-programmable link preferences (see the flowchart of Fig. 4) include a usage quota on the wireline link (see "pre-defined threshold" recited in col. 9, lines 66-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Gupta by using the features, as taught by Smyth, in order to detect a fault in the system.

24. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Gupta et al. (US Patent Application Publication No. 2002/0075868) and further in view of Yamashita et al. (US 2005/0097243).

Li discloses a system and method for failure recovery of high-speed modems (see the Title) comprising the following features.

Regarding claim 37, a method for protecting a wireline access link (see the Title), comprising the steps of: a) transmitting user traffic between a user site and a network provider site in a broadband access connection carried over said wireline link (see Internet access on high-speed modem recited in the Abstract); b) monitoring integrity of said wireline link (see "The modem interchange software detects" recited in para. [0033]

on page 3) and generating a fault signal upon detection of a specified under-performance of said broadband access connection (see “communicates the failure to the modem backup software module” recited in para. [0033] on page 3); and c) switching said user traffic from said broadband access connection to a backup connection according to said fault signal (see “switch from the high-speed modem to a dial-up modem” recited in para. [0033], page 3; and how “the data redirection software module” redirects all data recited in [0034], page 30).

Li discloses the claimed limitations above. Li does not disclose the following features: regarding claim 37, wherein said backup connection is a wireless link and maintaining said wireless link available only on request.

Gupta discloses a network node with multi-medium interfaces (see the Title) comprising the following features.

Regarding claim 37, wherein said backup connection is a wireless link (see “wireless link as a backup link” recited in para. [0043], page 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li by using the features, as taught by Gupta, in order to implement the system easier, keep it work in almost any topology, and satisfy quality of service.

Li and Gupta disclose the claimed limitations above. Li and Gupta do not disclose the following features: regarding claim 37, maintaining said wireless link available only on request.

Yamashita et al. discloses a storage path control method comprising the following features.

Regarding claim 37, maintaining said backup link available only on request (see user have options to maintain the alternate path available or switch back to normal path recited in para. [0366-0368] page 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Gupta by using the features, as taught by Yamashita, in order to make the system friendlier to users.

25. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562) and further in view of Koyanagi et al. (US Patent Application Publication No. 2006/0168336; hereinafter Koyanagi).

Li and Hrastar disclose the claimed limitations above. They do not disclose the following features: regarding claim 41, wherein said test data comprises one of low-priority user traffic and test probes.

Koyanagi discloses re-challenge communication control method and system (see the Title) comprising the following features:

Regarding claim 41, wherein said test data comprises one of low-priority user traffic and test probes (see "priority is lower" recited in para. [0019], page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Hrastar by using the features, as taught by Koyanagi, in order to simplify the test of recovery of broadband connection.

26. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Hrastar et al. (US Patent Application Publication No. 2001/0043562) and further in view of Higginson et al. (US Patent No. 5,610,951; hereinafter Higginson).

Li and Hrastar disclose the claimed limitations above. They do not disclose the following features: regarding claim 43, wherein said time intervals increase progressively to reduce the impact of testing on traffic performance.

Higginson discloses efficient ATM cell synchronization (see the Title) comprising the following features:

Regarding claim 43, wherein said time intervals increase progressively to reduce the impact of testing on traffic performance (see "increasing the test period length" recited in col. 3, lines 10-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li and Hrastar by using the features, as taught by Higginson, in order to reduce the traffic.

27. Claims 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent Application Publication No. 2004/0078626) in view of Weldon et al. (US 5,936,938) and further in view of Antoniou et al. (US Patent No. 6,965,775) and Notani (US Patent Application Publication No. 2003/0028093; hereinafter Notani).

Li, Weldon, and Antoniou disclose the claimed limitations above. Li and Antoniou do not disclose the following features: regarding claim 44, wherein said high priority traffic is selected by means of policing or shaping low priority traffic at said user site

when traffic presented exceeds the available upstream link capacity; regarding claim 45, wherein said high priority traffic is selected by means of policing or shaping low priority traffic at said network provider site when traffic presented exceeds the available upstream link capacity.

Notani discloses (see the Title) comprising the following features:

Regarding claim 44, wherein said high priority traffic is selected by means of policing or shaping low priority traffic at said user site (see “shaping function” recited in para. [0136], page 8) when traffic presented exceeds the available upstream link capacity (see “exceeds” recited in para. [0231], page 14).

Regarding claim 45, wherein said high priority traffic is selected by means of policing or shaping low priority traffic at said network provider site (see “shaping function” recited in para. [0136], page 8) when traffic presented exceeds the available upstream link capacity (see “exceeds” recited in para. [0231], page 14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Li, Weldon, and Antoniou by using the features, as taught by Natani, in order to provide a transmission apparatus able to greatly reduce the capital costs and running costs of an optical network for transmitting IP signals (Natani: para. [0010] page 1).

Response to Arguments

28. Applicant's arguments filed October 31 2007 about 35 USC 103 rejection of claim 17 (see last paragraph page 17 to second paragraph page 18) have been fully

considered but they are not persuasive. On the cited remarks, the Applicants argue that the reference of Gupta does not teach that "step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link by discarding low priority data from said user traffic". Examiner has reviewed the reference and the claim with care and respectfully disagrees with the Applicant's remarks. First, this is 35 USC 103 rejection (please see rejection above). Primary reference of Li teaches wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said backup link (see "switch from the high-speed modem to a dial-up modem" recited in para. [0033], page 3; and how "the data redirection software module" redirects all data recited in [0034], page 30). Second, the reference of Gupta teaches wherein said step of filtering comprises adapting the bandwidth of said wireline link to the bandwidth of said wireless link (see multiple interface enables to switch links between fiber optic and wireless links recited in para. [0041], page 3 and [0043], page 4) by discarding low priority data from said user traffic (see as implementing with quality of service low priority packets are dropped during switching to time of limited bandwidth such as wireless link recited in para. [0086], pages 9-10).

29. Applicant's arguments filed October 31 2007 with respect to rejection of claims 30, 32, and 37 have been considered but are moot in view of the new ground(s) of rejection.

30. Applicant's arguments filed October 31 2007 about 35 USC 103 rejection of claim 33 (see fifth paragraph page 23 to second paragraph page 24) have been fully considered but they are not persuasive. On the cited remarks, the Applicants argue that

the reference of Smyth does not teach that "wherein said fault signal is generated based on user-programmable link preferences". Examiner has reviewed the reference and the claim with care and respectfully disagrees with the Applicant's remarks. Smyth clearly teach this limitation (see how references are set up to detect a defective channel recited in col. 9 line 37-col. 10 line 26 and Fig. 4).

31. Applicant's arguments filed October 31 2007 about 35 USC 103 rejections of claims 14 and 42 (see seventh paragraph page 24 to second paragraph page 25) have been fully considered but they are not persuasive. On the cited remarks, the Applicants argue that the reference of Li and Hrastar do not teach that "switching back said user traffic from said backup link on said wireline link at specific intervals and determining if said fault signal has been cleared". Examiner has reviewed the reference and the claim with care and respectfully disagrees with the Applicant's remarks. First, this is 35 USC 103 rejection (please see rejection above). Primary reference of Li teaches switching back said user traffic from said backup connection on said broadband access connection (para. [0035], [0090] Fig. 14, see steps 380 through 405 for restoring the high-speed connection) and determining whether said fault signal has been cleared (para. [0035], [0090], see detecting if the high-speed modem resumes to normal operation). Second, the reference of Hrastar teaches that switching back said user traffic from said backup link on said wireline link at specific intervals (see rerouting back to normal operation after period of time recited in para. [0024], page 2).

Conclusion

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Q. Tran whose telephone number is (571) 272-9737. The examiner can normally be reached on Mon-Fri: 7:30 am - 5 pm, off alternative Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TQT

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

